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Growth promoter on the effect of performance of feed conversion efficiency and mortality of broiler chicks

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Abstract
The broiler chicks were divided into four group having 23, 25, 25 and, 25 chicks in I, II, III, and IV group respectively. This experiment was being conducted at poultry research centre of Udai Pratap Autonomous College, Varanasi (U.P.) was carried out on one week aged 98 chicks in December 2012. The highest feed conversion ratio was found in first group (1.78) while it was equal in II and III group (1.57). The lowest feed conversion ratio was also found in II and III experimental group. These two experimental groups show the better growth rate and consumed less amount of feed. The data indicated that the only first group having 3.92 percent mortality. Other experiment groups was having zero percent mortality during this study. It means the growth promoter having the better effect on the performance of the broiler chicks.

Keywords: Feed conservation efficiency, mortality, broiler chicken

Introduction
The poultry sector accounts for about two percent of the Grass Domestic Product (GDP) of India and about 10 percent of the total Grass Nation Product (GNP) attributable to livestock. The poultry industry has made great progress after independence. It has grown rapidly at the rate of 4-6 per cent in layers and 8-10 per cent in broilers in the past two decades. With an annual out put of 37 billion egges and 1,000 million broilers, which yield 5.75 lakh tonnes of poultry meat; poultry adapts easily to any agroclimate condition required less land and capital and provides quick yield. The industry has provided direct employment to about 9 lakh people and given rise to many allied industries like feed, equipment, and pharmaceuticals, etc. Fisheries account for 50 per cent of meat production followed, by 30 per cent thought beef, 8 per cent by sheep and goats and 6 per cent each by pig poultry industries.

Poultry meat is an important source of high quality proteins, minerals and vitamins to balabce to human diet. Specially developed breeds of chicks meat (broiler) that has ability of quick growth and high feed converstion efficiency are now available. Depeding on the farm size, broiler farming can be the main source of family income, can provide subsidiary income and gainful employment to farmers throughout the year. Poultry manures, has high fertilizer value and can be used for increasing the yield of any crop. Broiler are marketed at an age of around 42 days. These are chickens reared for meat production. Broiler production is a short-term enterprise. Therefore, a number of batches can be raised within a year, or it could be part time job. A number of strains exist in various regions of the country for broiler production, which have a gentic potential to achieve 2.0 kg. live weight at the age 42 days.

Indian meat and meat product found a place in foreign markets. The export of meat and meat products, which recorded a growth rate of 0.34 per cent per annum during 1981-1991 accelerated to 11.81 per cent during 1992-2001. In the post WTO period, it recorded a growth rate of 8.14 percent the forth highest among meat exporting countries after Brazil, Canada and Thailand. So there potential for develping the broiler industry in the country and it can be exploited to increased the employment and income in rural areas. Broiler farming has been given importance in the national policy and a number of broiler development scheme have been implemented successfully, with financial assistance and support of the central/state governements and poultry corporations. The experiment was conducted in supplemental vitamins and trace minerals were removed from a 20% CP corn-soybean meal broiler diet

during the period 35 to 42 days posthatching. Kavita *et al*. (1997) [1] observed that Vitamin and trace mineral withdrawal reduced daily weight gain and slightly decreased the bio-available riboflavin content of breast and thigh muscle.

The effects of dietary supplementation of five growth promoters were evaluated by Afshin Zakeri and Pedram (2011) [2] in broiler chicken by their effects on humoral immunity, growth performance, mortality and feed intake increase. Birds receiving organic selenium in their diets had improved eviscerated weight, breast yield and reduced drip loss. M. Choct *et al*. (2004) [3] concluded that There were significant concentration × source interactions on yields of breasts and marylands (thigh plus drumstick), with elevated levels of organic selenium increasing the yields, whereas the opposite was true for the inorganic selenium. Broiler chicks were offered semi-purified diets containing crystalline essential amino acids, including proline, supplemented with various nitrogen sources. Individual final body weights, food consumption and food conversion efficiencies (FCE) were measured by Lee & Blair (2007) [4]. Supplementation of trace minerals with a large safety margin in broiler chickens has resulted in a high level of mineral excretion that ends up in the environment was conducted by Y. M. Bao, M. Choct, P. A. Iji and K. Bruerton (2007) [5]. It is possible to use these lower levels of organic trace minerals in broiler diets to avoid high levels of trace mineral excretion. The effect of phytase on the performance, AMEn, and the ileal digestibility of N and amino acids was investigated by Namkung and Leeson (1999) [6] **t**he diet with supplemental phytase had a higher compared with the control diet. The effect of amino acid deletion assay, a protein efficiency ratio (PER) assay, and a slope-ratio growth assay were used to establish the limiting order of AA, and to determine the effects of microbial phytase on protein utilization in corn gluten meal (CGM) fed to chicks Peter, Y Han, and S D Boling-Frankenbach (2000) [7] observed that weight gain and gain: feed increased linearly as a function of protein intake, but phytase supplementation had no effect on weight gain or gain: feed slopes. These results indicate phytase did not increase either CP or AA utilization in CGM for young chicks. The effect of high dietary levels of soluble sources of Zn on tissue Zn, Cu, and Fe concentrations as influenced by two methods of oral Zn administration by M. Sadoval, P R Henry, R C Littell, and R D Miles (1999) [8]. The effect was observed that feed intake was similar among treatments. Bone Zn was increased by Zn source and was greater. The effect of phytase on the performance, AMEn, and the ileal digestibility of N and amino acids was investigated by Namkung and Leeson (1999) [6]. The diet with supplemental phytase had a higher AMEn compared with the control diet. The experiments were conducted by Mendonca & Jensen (1989) [9] with male broiler chickens from 3 to 6 weeks of age to determine the effect of dietary protein content on the requirement for sulphur amino acids (SAA). The SAA requirement for body weight gain increased as dietary protein content increased.

Phytate phosphorus (PP) hydrolysis by a 3-phytase was studied by Tamim and Roselina (2003) [10] *in vitro* at in poultry diets, it is Ca that inhibits PP hydrolysis and decreases P availability. The experiments were conducted by R. Belmar and Morris (1994) [11] in Mérida, Mexico, between 1987 and 1990 in which jack beans, treated in various ways, were included in chick diets. The effect observed when broiler chicks are fed diets containing treated jack beans and to examine the effect of canavanine on the efficiency of protein retention of broiler chicks.

Materials and Methods

The present investigation was designed and carried out to study the performance of commercial broiler fed with different levels of Growth-Promoter with drinking water. The experiment was being conducted at poultry research centre of Udai Pratap Autonomous College, Varanasi (U.P.).

1. Experimental chicks and their management

Ninety eight chicks (ven cob) were tagged for identification individually weighted and distributed into four groups Chicks were housed grouped wise in separated pan under identical feeding and management conditions. 24 hours light was provided to the chicks during experimental period.

The name and number of chicks for each group and the name of ferm from where chicks were purchased are given, No. of groups 4 group and No. of chicks (I-23 chicks, II-25 chicks, III-25 chicks, III-25& IV-25 chicks). The chicks were purchased in lot from R. Conix Hatcheries Pvt. Ltd. Lahartara Varanasi (U.P.).

2. Preparation of experimental diets: Group I -Usual commercial feed + Growth promoter (promoter @1.5ml/liter with fresh water), Group II -Usual commercial feed+ Growth promoter (Promoter @ 2.5ml/liter with fresh water), Group III - Usual commercial feed + Growth Promoter (Promoter @3.5ml/liter with fresh liter), Group IV -Usual commercial feed.

3. Observation to be recorded-I**:** Average feed intake up to 5 weeks, II. Average water intake up to 5 weeks, III. Body weight of experimental chicks, IV. Mortality rate up to 5 weeks of age.

4. Procurement of feed and Growth promoter

Both starter and finished rations were purchased from Ritu medical and poultry feed S-17/331 "O" Vijay Nagar, Maldahiya Varanasi, and growth promoter G-promoter in liquid from was procured from the local market and manufacture by Tetragon Chemie Pvt. Ltd. IS-40 Bangalore. Growth promoter has following composition (Table1) as declared by the manufacture.

Table 1: Growth Promoter (500 ml) contains

S. No.	Constituents	Amount
1	Methionine activity	127.6 gm
2	Choline chloride	63.125 gm
3	Lysine Hydrochloride	459.00 mg
4	Sodium	154.16 mg
5	Phosphorus	154.16 mg
6	Magnesium	595.4 mg
7	Zinc	215.7 mg
8	Ferrous	223.4 mg
9	Copper	158.8 mg
10	B6	100 mg
11	B12	500 mcg
12	Folic acid	33 mg

Plan of Feeding

Weighted quantity of feed was provided in separated contained daily at 8.00 am to the chicks of respective groups. Residues left were weighted and recorded daily. Net feed consumed by the chicks of each group was calculated throughout the experimental period. Similarly fresh water was provided to the chicks during the experimental period and observation related to the water intake was also taken timely

during this experiment. Similarly mortality was also recorded in each group during experimental period. Feed conversion ratio of each group was calculated with the help of total feed intake and body weight gain during experimental period.

Result and Discussion

The present section describes the effect of Bio-promin on the performance of broiler chicks. All the experimental chicks were maintained on well balanced diet. The feeding pattern was same with different dose of Bio-promin for all the groups under observation. In this study feed was given to all experimental chicks according to their requirement in their early parts of life.

Feed conversion ratio of different group during this experiment have been calculated and presented in Table 2. The highest feed conversion ratio was found in first group (1.78) while it was equal in II and III group (1.57). The lowest feed conversion ratio was also found in II and III experimental group. These two experimental groups show the better growth rate and consumed less amount of feed.

Table 2: Feed Conversion Ratio of different experimental groups

Group	Total Feed Intake (gm)	Total Body Weight gain (gm)	FCR (gm)
G I	1760.00	986	1.78
G II	1572.00	1001	1.57
G III	1527.00	971	1.57
G IV	1647.00	973	1.69

Mortality

The percentage of mortality during this experiment in each group has been given in Table 3. The data indicated that the only first group having 3.92 percent mortality. Other experiment groups having zero percent mortality during this study. It means the growth promoter having the better effect on the performance of the broiler chicks.

Table 3: Mortality during experimental period in different groups (%)

Group No.	I Week	II Week	III Week	IV Week	Total	Total Mortality/Group/Week	Average Mortality % Age
I	0	0	2	0	2	0.4	3.92
II	0	0	0	0	0		
III	0	0	0	0	0		
IV	0	0	0	0	0		

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